

[illegible]

ADMIN RECORD

Appendix 5

Random Grab Sampling for Confirmation of Mound Hot Spot Removal

Introduction

This appendix to the Mound Site SAP was prepared to evaluate soil remaining below a radiological "hot spot", removed from the Mound Site excavation in September, 1997. The soil being removed did not originate from the Mound Site but was placed in the excavation during the return of the treated Mound Site soil to the excavation in August, 1997. The soil was thought to be below the RFCA Tier II Action levels but was discovered to be in excess of the Tier I levels and was thus required to be removed. The hot spot removal is being conducted under IWCP T0094104, *Excavate Mound Site Hot Spot*.

Sampling Approach

A statistical sample is required to characterize subsurface soils representative of the final lift of an excavation designed to remove buried radionuclides in IHSS 113, commonly referred to as the Mound Hot Spot. The sampling scheme is designed to ensure, with measurable confidence, that radionuclides above RFCA Tier II levels do not remain subsequent to the excavation and removal process.

The sampling approach requires a simple, square, symmetrical grid from which random samples can be taken, thereby ensuring a representative sample of the exposed subsurface soils (i.e., the soils immediately underlying the lift). Random numbers were generated within MS EXCEL 97 software. Remaining radionuclide activities and associated statistical confidence at the lower lift surface can be calculated when results from the grab samples are available. A duplicate sample, to ensure overall measurement repeatability, is also specified.

Simple random random sampling of the type described above is a commonly used industry standard for characterization of materials (geologic and otherwise), and is further discussed by Gilbert (1987) and in other sampling/statistical textbooks.

Samples will be collected in accordance with the guidance given in Figure A5-1. Essentially, location 5 will be at the center of the removed hot spot. The orientation of the grid will be noted in the field logsheets. In addition to the samples collected at the base of the excavation, approximately three samples will be collected on the sloped sidewall leading to the base where the "hot spot" soil was originally placed. These samples will be collected approximately 6 inches above the base of the lift (this corresponds to a likely elevation in which sidewall contamination could have occurred). These samples will be collected systematically around the perimeter such that they are approximately equally spaced. The original sampling point (the origin) of these samples will be randomly located.

Field Change #6
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These samples will be analyzed for gross alpha/beta analysis by the onsite Building 881 Laboratory. The data will be filed under Report Identification number (RIN) 97A2867. Sample numbers will include:

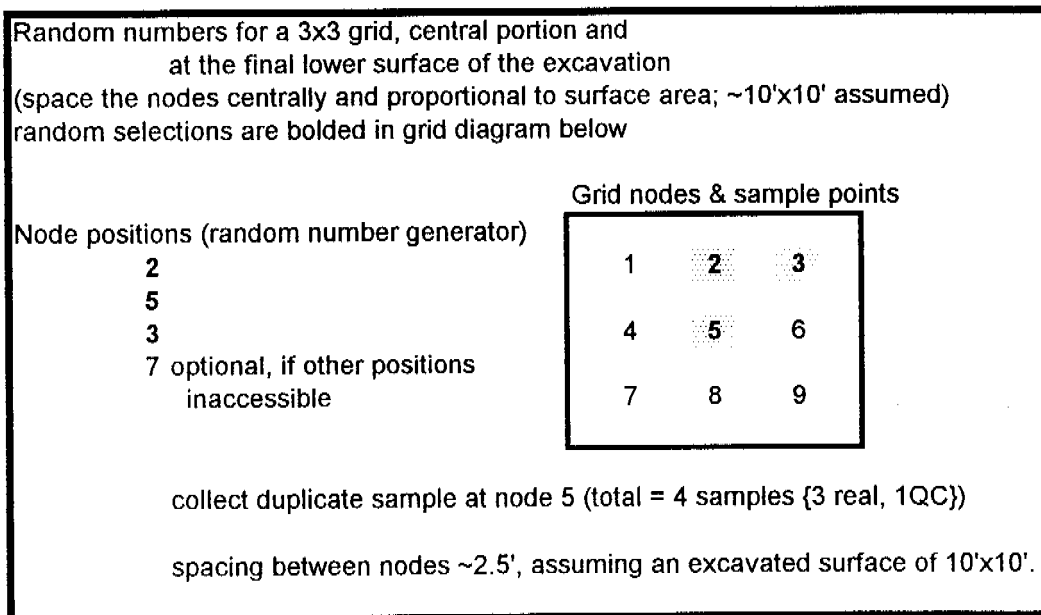
EB00029RM - location 5
EB00030RM - location 2
EB00031RM - location 3
EB00032RM - location 5 (a duplicate)
EB00033RM - side
EB00034RM - side
EB00035RM - side

Samples will be collected using new plastic scoopes or similar equipment. Samples will be collected from the surface of the lift to approximately 2-4 inches below the lift. Rinsate samples will not be collected, thus all detections will be considered real.

For this limited scope task, the organization structure described in Figure 6-1 of the main body of this SAP is modified by the following:

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FIGURE A5-1 RANDOM GRAB SAMPLING FOR FINAL LIFT CONFIRMATION
(MOUND HOT SPOT, IHSS 113)



REFERENCES

Gilbert, R.O., 1987. *Statistical Methods for Environmental Pollution Monitoring*, Van Nostrand Reinhold, New York, NY.